

## REMARKS

### I. Introduction

Claims 1, 3-8, and 18-25 stand rejected under a combination of references. The claims are not obvious for two reasons. First, the claimed invention shows unexpectedly superior results in tests for the performance of turf reinforcement mats. Second, there are four elements that are not taught by any of the pending prior art references. For these reasons, Applicant respectfully requests a Notice of Allowance.

### II. Applicants' Claimed Turf Replacement Mat Is Not Obvious Because The Claimed Invention Demonstrates Unexpectedly Superior Results

The contribution of the Martin reference to the combinations is the use of tri-lobe fiber. Martin does not suggest the unexpectedly superior results achieved with tri-lobe fibers as compared to other fibers.

The Federal Circuit in *Proctor & Gamble v Teva Pharmaceuticals USA, Inc.* noted that a patent owner may rebut prima facie obviousness by showing the claimed invention exhibits some superior property or advantage that a person of ordinary skill in the relevant art would have found surprising or unexpected. 566 F.3d 89, 994 (Fed. Cir. 2009) (Attached). Without admitting the existence of a prima facie case, Applicant will show that the claimed fiber shape provides superior results, and also show that this result is unexpected.

#### A. Applicants' Turf Replacement Mat Made With Tri-Lobe Fibers Is Superior to An Equivalent Mat Made With Single-Lobe Fibers.

The Specification compares a turf reinforcement mat having tri-lobe fibers of the present claims, sample B, against a turf reinforcement mat having round monofilament fibers, sample A. See page 10, lines 14-24. Sample A is a commercially available round monofilament turf reinforcement mat. Apart from the fibers, Sample A has exactly the same construction as the claimed mat, sample B. Both samples A and B weigh 10 ounces per square yard (0.3 kg/m<sup>2</sup>).

The test results, set forth in the application, disclose the superiority of the mat having tri-lobe fibers. The germination tests demonstrate the claimed invention construction exhibits a 71% improvement in seed germination rate per unit area. See Table I, page 11 and paragraph [0043]. The claimed invention exhibits an average pit height improvement of 16%. See application, Table I and paragraph [0043]. The claimed invention exhibits a 7% less soil loss. See application page 14, third paragraph. The claimed invention exhibits a 6% improved shear stress. See Table IV, paragraph [0052].

B. The Superiority of The Claimed Mat Is Unexpected.

Applicants' tests show the geometry of the fibers is a result-effective variable. The prior art does not teach that the geometry of the fibers is a known result-effective variable, and therefore the superior results shown above are unexpected.

The MPEP specifically requires at section 2144.05 that for a superior result to qualify as an obvious variable as an optimization, a particular parameter must first be recognized as a result-effective variable. To be characterized as an obvious optimization the result-effective variable must be one that achieves a result recognized by the prior art.

To establish prima facie obviousness, it remains necessary to identify some supportable reason that would lead a person to make the asserted modification. See *Proctor & Gamble v Teva Pharmaceuticals USA, Inc.*, 566 F.3d at 994 (Attached). Martin fails to suggest a preference for any specific shape, much less the tri-lobe shape. According to Martin,

In a typical sheath-core filament... the filaments can be ... circular or round in cross-section or non-circular or odd in cross-section, e.g., lobal, elliptical, rectangular and triangular.

See Col. 5, lines 19-27.

It also does not teach or suggest superior performance for tri-lobe fibers in a turf reinforcement mat.

The present application is analogous to the situation in a case cited in the MPEP, *In re Antonie*, 559 F.2d 618 (CCPA 1997)(Attached). In *Antonie*, the prior art did not recognize that wastewater treatment capacity is a function of tank volume to contract ratio. The claimed ratio of 0.12 for tank volume to contract area was held to be non-obvious. Analogously, in the present case, the prior art does not recognize that the parameter, shape of the fiber, is a result-effective variable. Therefore, Applicant's claimed parameter, a tri-lobe fiber having a particular geometry, is non-obvious.

C. The Propriety of Testing Against Single-Lobe.

Testing against anything other than single-lobe fibers is not suggested by the prior art or commercial practice. Applicants are unaware of any non-single-lobe fibers being used commercially. The single-lobe was chosen because of its availability, and the dominance of its use. On the other hand, there is no suggestion in the prior art or commercially to test anything other than single-lobe fibers as a standard. Accordingly, the single-lobe fiber already tested is the appropriate material to test.

The improved performance of Applicants' claimed invention in relation to standard tests for turf reinforcement mats are unexpected advantages in view of the prior art. In view of the foregoing, the Applicant has demonstrated the allowability of Claims 1, 3-8, and 18-25.

III. Four Elements Are Not Taught By Any of the Applied References.

One skilled in the art appreciates at least four differences between Martin and the current invention. First, Martin's filaments are undrawn but the claimed invention filaments are drawn. Martin, in the summary of the invention, states, "This invention, in one aspect, provides

**undrawn**, tough, durably melt-bonded....” (Col. 3, lines 52-55). The current invention is described as, “The fiber is then drawn into the oven at temperatures of 280 +/-3° C. and **draw** ration of 6.5/1” (Para. [0027], lines 10-12). Second, Martin’s filaments are **durably melt-bonded** into a continuous network. Martin characterizes the multicomponent filament as “durably melt-bondable, this means that a plurality or aggregation of such filaments, such as an open, non-woven web, can be bonded together at their points of contact or intersection to form an interfilament-bonded structure...” (Col. 5, lines 35-41). In contrast, the claimed invention has individual strands and uses z-direction stitches through the exterior netting to hold filaments in place. The current invention states, “Each fiber is one continuous strand (minimum of 160 holes per die) which is wound up on a winder to form a package or spool.” (Para [0027], lines 12-14).

Third, Martin’s filaments are continuous unlike the claimed invention where the filaments are cut into strands. Martin directs the preferable filaments

... are melt-extruded as a bundle or group of free falling, closely spaced, generally parallel, **discrete, continuous, multicomponent filaments** of hot, tacky, deformable, viscous polymer melts for example, as sheath-core bicomponent fibers, the hot filaments than being quickly cooled, or quenched, to a non-tacky or non-adhesive solid state.

Col. 7, lines 25-31.

The current invention uses:

In a secondary process, the fiber from several packages forms a toe line that is fed through a mechanical crimper and cutter. The crimp box pressure is set at 0.5+/-bar and cutting wheel spacing of 4.6 inches (11.68 cm). In the practice of this invention, the individual polymer fibers are cut to a length of from about 2 inches (5 cm) to about 12 inches (30 cm), with from about 3 inches (7.6 cm) to about 7 inches (17.8 cm) being preferred.

(Para [0028], lines 1-8).

Finally, Martin's surface roughness differs on each side of entangled web. The claimed invention filament web has no appreciable change in surface roughness on the top versus the bottom. The claimed invention is described as, "The cut fiber is dumped into a hopper that feeds into a Meyer machine. The fiber is sandwiched between first and second nets." (Para [0028], lines 8-10).

#### IV. Conclusion.

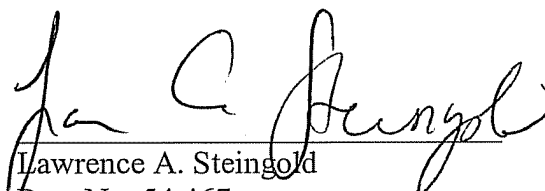
Applicant has demonstrated both unexpected superior results and elements that are not contained in the prior art. A Notice of Allowance is earnestly solicited. Should an interview or a declaration in support of certain facts recited in the specification be deemed to advance prosecution (over the oath provided prior to prosecution) Applicants respectfully request that the undersigned attorney be contacted.

The present communication responds to the Office Action mailed October 19, 2009. Any necessary extension fee may be deducted from Deposit Account No. 23-0920.

Respectfully submitted,

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